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MARSH, FISCHMANN & BREYFOGLE LLP
3151 SOUTH VAUGHN WAY
SUITE 411
AURORA, CO 80014

EXAMINER

WOLLSCHLAGER, JEFFREY MICHAEL

ART UNIT PAPER NUMBER

1732

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/791,150	Applicant(s) BRAUSE ET AL.	
	Examiner Jeff Wollschlager	Art Unit 1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) 43-51 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/2/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group I, claims 1-42, in the reply filed on June 9, 2006 is acknowledged. The traversal is on the ground(s) that a common search applies to both groups. This is not found persuasive because the two groups are distinct and have acquired a separate status in the art in view of their different classification. Also, in addition to the reasons previously given by the examiner, claim 43 requires adhesive be applied within a joint defined in part by said first overmolded part and intersecting with said at least one adhesive receptacle. This limitation is not required in the invention of Group I. As such, restriction for examination purposes as indicated is proper.

The requirement is still deemed proper and is therefore made FINAL.

Claims 43-51 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims include the recitation "actuator/coil

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assembly” or “coil/bobbin assembly”. These recitations are indefinite because it is unclear what limitation this is intended to provide to the claim. For the purposes of examination the recitations are understood as “an assembly comprising an actuator and a coil” and “an assembly comprising a coil and a bobbin”.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-8, 13, and 17-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Arisaka et al. (U.S. Patent Application Publication 2003/0081355; published May 1, 2003; filed October 24, 2002).

Regarding claim 1, Arisaka et al. teach a method for making an assembly comprising an actuator and a coil for a data storage device comprising the steps: overmolding a coil to an actuator, wherein said overmolding step comprises attaching said coil to said actuator; and disposing an adhesive in at least one adhesive receptacle (20) defined by said overmolding step, wherein said disposing step is executed after

said overmolding step (paragraphs [0033, 0035, 0041]; Figure 2, elements (3, 6, 10, 11, 20); Figure 3, elements (3, 10, 11, 12, and 20); Figure 7, elements (1, 3, 6, 15)).

It is noted that Arisaka et al. employs somewhat different language than the instant application and from that which is normally used in the art. For example, Arisaka et al. refers to the bobbin, as is commonly understood, as a reinforcement plate/internal molding. Additionally, Arisaka et al. define the actuator arms within which the coil is disposed, as the bobbin. For the purposes of examination, the terms as defined in the instant application are used.

As to claims 2 and 3, Arisaka et al. teach the overmolding step comprises forming a first overmolded part, including a bobbin/reinforcement plate/internal molding that is attached to said coil by said overmolding step, wherein said coil is disposed about at least part of said bobbin (paragraphs [0033, 0035, 0041], Figure 3, element (11); Figure 7, element (15)).

As to claim 4, the method taught by Arisaka et al. is such that the stiffness of the assembly is greater after the disposing step than it was after the overmolding step.

As to claim 5 and 6, Arisaka et al. teach the overmolding step comprises disposing said coil and said actuator in a mold, wherein said method further comprises the step of removing said actuator from said mold after said overmolding step and thereby with said coil being attached to said actuator, and wherein said disposing step is executed after said removing step without any fixtures. It is noted that element (20) comprises pins that hold the assembly during the overmolding step, but that the pins are

removed after the overmolding step, prior to the disposing step. Adhesive is applied to the holes left by the removed pins (paragraphs [0033, 0035, and 0041]).

As to claims 7, 8 and 13, Arisaka et al. teach the overmolding step comprises forming a first overmolded part and forming a first adhesive receptacle in said first overmolded part, wherein said disposing step is executed within said first adhesive receptacle and wherein said first overmolded part structurally joins said actuator with said coil and wherein said coil comprises a coil opening wherein said first overmolded part is disposed within said coil opening and is attached to said coil. (paragraphs [0033, 0035, and 0041]).

Regarding claim 17, Arisaka et al. teach a method for making an assembly comprising an actuator and a coil for a data storage device comprising the steps of: disposing a coil and an actuator in a mold; executing a first molding step comprising molding a first molded part that structurally joins said coil to said actuator wherein said first molding step is executed within said mold; executing a second molding step comprising molding a bobbin/reinforcement plate/internal molding that structurally joins said coil to said bobbin, where said coil is disposed about at least part of said bobbin, and wherein said second molding step is executed within said mold; forming at least one adhesive receptacle in at least one of said first molded part and said bobbin during at least one of said first and second molding steps; removing said actuator, said first molded part, said coil, and said bobbin from said mold as a single unit after completion of said first and second molding steps; and disposing an adhesive in said at least one adhesive receptacle after said removing step (paragraphs [0033, 0035, and 0041]).

As to claims 18 and 19, the first and second molding steps are executed simultaneously, and each comprises overmolding (paragraph [0033], Figure 3, elements (10 and 12)).

As to claim 20, the method taught by Arisaka et al. is such that said disposing step comprises increasing a stiffness of at least one of first and second interconnections wherein said interconnections are between said actuator and said coil and between said coil and said bobbin (paragraphs [0033, 0035, and 0041]).

As to claim 21, the disposing step taught by Arisaka et al. is executed without any fixtures to retain said coil in a predetermined position.

As to claim 22, Arisaka et al. teach that said forming at least one adhesive receptacle is such that a first adhesive receptacle intersects with a joint partly defined by one of first molded part and said bobbin/internal molding/reinforcing plate (paragraphs 0033, 0035, 0039, 0041).

Claims 1, 2, 4-12, and 29-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Lin (U.S. Patent 6,867,950; issued March 15, 2005; filed January 31, 2003).

Regarding claim 1, Lin teaches a method for making an assembly comprising an actuator and a coil for a data storage device comprising the steps: overmolding a coil to an actuator, wherein said overmolding step comprises attaching said coil to said actuator; and disposing an adhesive in at least one adhesive receptacle defined by said overmolding step, wherein said disposing step is executed after said overmolding step

(Figure 1, elements (16, 18, 20, 22, 24, 27, 29); Figure 3, elements (310, 311, overmolding not shown); col. 1, lines 45-63; col. 7, lines 5-18).

As to claim 2, Lin teaches the overmolding step comprises forming a first overmolded part that is attached to each of said actuator and said coil by said overmolding step (col. 1, lines 45-63; col. 7, lines 5-18).

As to claim 4, the method taught by Lin is such that the stiffness of the assembly is greater after the disposing step than it was after the overmolding step.

As to claims 5 and 6, Lin teaches the overmolding step comprises disposing said coil and said actuator intrinsically in a mold, wherein said method further comprises the step of removing said actuator from said mold after said overmolding step and thereby with said coil being attached to said actuator, and wherein said disposing step is executed after said removing step without any fixtures (Figure 1, elements (16, 18, 20, 22, 24, 27, 29); Figure 3, elements (310, 311, overmolding not shown); col. 1, lines 45-63; col. 7, lines 5-18).

As to claims 7 and 8 Lin teaches the overmolding step comprises forming a first overmolded part and forming a first adhesive receptacle in said first overmolded part, wherein said disposing step is executed within said first adhesive receptacle and wherein said first overmolded part structurally joins said actuator with said coil and wherein said coil comprises a coil opening wherein said first overmolded part is disposed within said coil opening and is attached to said coil (Figure 3, elements (310, 311, overmolding not shown); col. 1, lines 45-63; col. 7, lines 5-18).

As to claims 9-12, Lin teaches that said forming a first adhesive receptacle step comprises disposing said first adhesive receptacle on a perimeter of said first overmolded part and attaches to the overmolded part, the actuator and the coil (Figure 3, elements 310 and 311, overmold not shown).

Regarding claim 29, Lin teaches a method for making an assembly comprising a coil and an actuator for a data storage device, comprising the steps: employing a first bonding operation, to attach a coil to an actuator; and employing a second bonding operation to attach said coil to said actuator, wherein said second bonding operation is executed after a completion of said first bonding operations (Figure 1, elements (16, 18, 20, 22, 24, 27, 29); Figure 3, elements (310, 311, overmolding not shown); col. 1, lines 45-63; col. 7, lines 5-18).

As to claim 30, the method taught by Lin is such that said first and second bonding operations comprise providing a first and second stiffness for an interconnection of said actuator to said coil, wherein the second stiffness is greater than the first stiffness.

As to claims 31-33, Lin teaches the first bonding operation comprises an overmolding operation and said second bonding operation comprises disposing an adhesive in at least one joint resulting from said overmolding operation, wherein said overmolding operation comprises form a first overmolded part that is attached to each of said actuator and said coil and said disposing step is executed within at least one adhesive receptacle (Figure 3, elements (310, 311, overmolding not shown); col. 7, lines 5-18).

As to claim 33-36, at least one adhesive receptacle intersects with a joint between first overmolded part, said actuator, as well as with a joint between said first overmolded part and said actuator (Figure 1 and Figure 3; col. 7, lines 5-18; col. 2, lines 61-63).

Claims 29 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Angellotti (U.S. Patent Application Publication 2001/0042941; published November 22, 2001).

Regarding claim 29, Angellotti teaches a method for making an assembly comprising a coil and an actuator for a data storage device, comprising the steps: employing a first bonding operation, via interlocking means, to attach a coil to an actuator; and employing a second bonding operation to attach said coil to said actuator, wherein said second bonding operation is executed after a completion of said first bonding operations (paragraph [0032]).

As to claim 30, the method taught by Angellotti is such that said first and second bonding operations comprise providing a first and second stiffness for an interconnection of said actuator to said coil, wherein the second stiffness is greater than the first stiffness (paragraph [0032]).

Claims 37 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Jabbari et al. (U.S. Patent 5,734,528; issued March 31, 1998).

Regarding claim 37, Jabbari et al. teach a method for making an assembly comprising a coil and bobbin for a data storage device, comprising the steps: employing a first bonding operation to attach a voice coil motor to a bobbin, via winding means; and employing a second bonding operation to attach said bobbin to said coil, wherein said second bonding operation is executed after a completion of said first bonding operation (col. 4, lines 15-37).

As to claim 38, the method taught by Jabbari is such that said first and second bonding operations comprise providing a first and second stiffness for an interconnection of said coil to said bobbin, wherein the second stiffness is greater than the first stiffness (col. 4, lines 15-37). The molding operation provides a greater stiffness than the winding operation.

Claims 29, 30, 37 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Tanaka et al. (U.S. Patent 6,229,675; issued May 8, 2001).

Regarding claim 29, Tanaka et al. teach a method for making an assembly comprising a coil and an actuator for a data storage device, comprising the steps: employing a first bonding operation, via interlocking means, to attach a coil to an actuator; and employing a second bonding operation to attach said coil to said actuator, wherein said second bonding operation is executed after a completion of said first bonding operations (col. 3, line 50-col. 4, line 9, col. 4, line 47- col. 5, line 2; col. 14, line 13-45)

As to claim 30, the method taught by Tanaka et al. is such that said first and second bonding operations comprise providing a first and second stiffness for an interconnection of said actuator to said coil, wherein the second stiffness is greater than the first stiffness (col. 3, line 50-col. 4, line 9, col. 4, line 47- col. 5, line 2; col. 14, line 13-45).

Regarding claim 37, Tanaka et al. teach a method for making an assembly comprising a coil and bobbin for a data storage device, comprising the steps: employing a first bonding operation to attach a voice coil motor to a bobbin, via winding means; and employing a second bonding operation to attach said bobbin to said coil, wherein said second bonding operation is executed after a completion of said first bonding operation (col. 3, line 50-col. 4, line 9, col. 4, line 47- col. 5, line 2; col. 14, line 13-45).

As to claim 38, the method taught by Tanaka et al. is such that said first and second bonding operations comprise providing a first and second stiffness for an interconnection of said coil to said bobbin, wherein the second stiffness is greater than the first stiffness (col. 3, line 50-col. 4, line 9, col. 4, line 47- col. 5, line 2; col. 14, line 13-45).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 13-15 are rejected over Lin (U.S. Patent 6,867,950; issued March 15, 2005; filed January 31, 2003), as applied to claims 1, 2, and 4-12 above, in view of Foisy et al. (U.S. Patent 6,061,206; issued May 9, 2006).

As to claims 13 and 14, Lin teaches the method of claim 7 as discussed in the 102(b) rejection above, but does not teach said first overmolded part is disposed within said coil opening and said adhesive within said first adhesive receptacle. Lin teaches that a separate bobbin is formed in advance and disposed in the coil opening for application of the adhesive. However, Foisy et al. teach an analogous method where

the bobbin/first overmolded part may be formed within the mold cavity.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to form the cleated bobbin with adhesive receptacles in the mold such that it was disposed within said coil opening for the purposes of eliminating an additional molding step.

As to claim 15, Lin teaches said overmolding step comprises forming a first overmolded part that forms at least one adhesive receptacle wherein said first overmolded part is disposed between and is attached to each of said actuator and coil by said overmolding step (Figure 3, overmold not shown, adhesive filled in receptacle 310). Lin does not teach a second overmolding step. However, Foisy et al. teach an analogous method where the bobbin/second overmolded part may be formed within the mold cavity.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to form the cleated bobbin with adhesive receptacles in the mold such that it was disposed within said coil opening for the purposes of eliminating an additional molding step. As such, the claimed invention as a whole is rendered *prima facie* obvious over the teaching of the prior art.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (U.S. Patent 6,867,950; issued March 15, 2005), as applied to claims 1, 2, and 4-12 above, in view of Thorson et al (U.S. Patent 5,623,759; issued April 29, 1997).

As to claim 16, Lin teaches the method of claim 1 as discussed above, but does not disclose the adhesive is applied by a wicking operation. However, Thorson et al. teach an analogous method where they teach applying the adhesive into a space by wicking.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to employ the wicking method of applying an adhesive as taught by Thorson et al. in the method for forming an assembly comprising an actuator and coil as taught by Lin, for the purpose as taught by Thorson et al. of achieving a consistent glue application (col. 3, lines 1-31).

Claims 23-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arisaka et al. (U.S. Patent Application Publication 2003/0081355; published May 1, 2003) as applied to claims 1-8, 13, 17-22, 29 and 30 in view of Lin (U.S. Patent 6,867,950; issued March 15, 2005) and further in view of Foisy et al. (U.S. Patent 6,061,206; issued May 9, 2006).

As to claims 23-28, Arisaka et al. teach the method of claim 22 as discussed in the 102(b) rejection above. Additionally, Lin teaches a method of forming a bobbin with cleated features wherein said cleated features provide additional surface area for adhesive bonding and Foisy et al. teach a method of molding the bobbin together with the actuator and coil (col. 8, lines 29-45).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to employ the bobbin containing the cleated

receptacles as taught by Lin in the method taught by Arisaka for the purpose, as taught by Lin of stiffening the coil assembly (Abstract). Additionally, it would have been *prima facie* obvious to directly mold the bobbin in the mold as taught by Foisy et al. for the purpose of eliminating a mold step. As such, the claims are rendered *prima facie* obvious over the combined teaching of the prior art.

Claims 37-42 and are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (U.S. Patent 6,867,950; issued March 15, 2005) in view of Thorson et al (U.S. Patent 5,623,759; issued April 29, 1997) and further in view of Foisy et al. (U.S. Patent 6,061,206; issued May 9, 2006).

Regarding claims 37 and 38, Lin teaches a method of employing a bonding means for attaching said bobbin to said coil comprising employing adhesive means to attach the coil to the bobbin, but does not teach two bonding operations. However, Thorson et al. teach employing a bonding operation to attach the coil to the bobbin, via winding means (col. 4, lines 37-42). Additionally, Foisy et al. teach a method of molding the bobbin together with the actuator and coil (col. 8, lines 29-45) which provides an additional bonding/overmolding operation.

Therefore, it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to employ the method of winding the coil around the bobbin as taught by Thorson et al. as a first bonding operation, followed by disposing the adhesive between the bobbin and the coil as taught by Lin, for the purposes of creating a stronger bond between the members. Additionally, it would have

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been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to combine the method taught by Foisy et al. of molding the bobbin in the mold cavity with the teaching of Lin of forming cleats to connect the bobbin and the coil for the purpose of creating a stronger bond between the members and reducing a molding step.

As to claims 39-42, Foisy et al. additionally teach the bobbin may be formed simultaneously with the coil frame through overmolding or may be placed in the mold cavity as a separate piece of plastic.

Conclusion

All claims are rejected.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Wollschlager whose telephone number is 571-272-8937. The examiner can normally be reached on Monday - Thursday 7:00 - 4:45, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JW

Jeff Wollschlager
Examiner
Art Unit 1732

July 31, 2006

af
CHRISTINA JOHNSON
PRIMARY EXAMINER

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